

PROJECT DEVELOPMENT GRANT

**DEVELOPMENT OF ALTERNATIVES FOR ADDITIONAL SEDIMENT
REMOVAL AT MILLTOWN**

**SUBMITTED BY:
CLARK FORK COALITION**

**TO:
STATE OF MONTANA
NATURAL RESOURCES DAMAGE PROGRAM**

MARCH 20, 2006

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APPLICANT INFORMATION AND PROJECT SUMMARY FORM

1. Name of Applicant(s) Clark Fork Coalition
2. Project Title Development of Alternatives for Additional Sediment Removal at Milltown
3. Type of Entity* Non-profit organization, stakeholders' group
(city, corporation, private individual, association, etc.)

(*Corporation and Foundation applicants are required to submit corporation information as follows: Articles of Incorporation, and Certificate of Good Standing. Partnership applicants are required to submit a Partnership Agreement and a list of the names of the Partners. Limited Liability Company applicants are required to submit Articles of Organization, a list of the members/managers, and Certificate of Good Standing. Associations are required to submit a list of members, Articles of Incorporation and Certificate of Organization. Please attach these documents to this form.)

4. Description of Project Location (Attach map showing location.) Milltown Reservoir, Milltown, Montana
5. Injured Natural Resource(s) and/or Impaired Services to be Restored, Rehabilitated, Replaced or Equivalent Acquired through Project This is a project development grant to describe alternatives and estimate costs of removing additional contaminated sediment in Milltown reservoir. Removal of these sediments would restore aquatic resources and riparian habitat of the Clark Fork River by allowing for a more naturally functioning channel, floodplain, and wetlands near the confluence with the Blackfoot River. Removal would also prevent the possibility of residual contamination that may occur as a result of leaving these sediments in place.

6. Authorized Representative: Tracy Stone-Manning Executive Director
(Name) (Title)
Mailing Address: Clark Fork Coalition, P.O. Box 7593
(Street/PO Box)
Missoula, MT 59807 406-542-0539
(City/State/Zip) (Telephone)

Contact Person*: Christine Brick Staff scientist
(Name) (Title)
Mailing Address*: P.O. Box 7593
(Street/PO Box)
Missoula, MT 59807 406-542-0539
(City/State/Zip) (Telephone)

E-mail Address: chris@clarkfork.org

7. Proposed Funding Sources

On the table below, enter the source and amount of all funding that may be used for this project. Indicate all potential sources of funds that you intend to apply for this project, even if you have not yet applied for the funds or have not yet received a commitment from the source. Indicate whether matching funds are cash or in-kind.

Funding Source		Amount in (\$) Dollars					Matching Fund Percentage (Funding Source Total/Project Total)
		Committed Funds			Uncommitted Funds	Total	
		Grants	Non-Grant Funds				
			Cash	In-kind			
A.	UCFRB Restoration Fund	\$23,452				\$ 23,452.00	94.37%
B.	Clark Fork Coalition			\$ 1,400.00		\$ 1,400.00	5.63%
C.							
D.							
E.							
F.							
G.							
H.							
I.							
Non-NRDP Totals		\$ 23,452.00		\$ 1,400.00		\$ 1,400.00	5.63%

8. Estimated Total Project Cost \$24,852.00
(Automatically Calculated from spreadsheet above)

9. Private (non-Governmental) Grant Applicant Financial Information

- Are there any lawsuits, judgments, or obligations pending for or against you? **no**
- Have you ever declared bankruptcy? **no**
- Are any of your tax returns delinquent or under dispute? **no**
- Any unpaid deficiencies? **no**
- Are you a party to a lawsuit? **yes**
- Do you have any other contingent liabilities? **no**
- Do your current and deferred liabilities exceed the value of your assets? **no**

Explain all **YES** answers in a statement attached to this form. –see below

Explanation for Question 9(e) (Are you a party to any lawsuit)

The Clark Fork Coalition is a plaintiff in a Montana state court challenge to the validity of a point-source discharge permit issued by the Montana Department of Environmental Quality to Revett Minerals, Inc. The case is awaiting a summary judgment ruling from state district court in Helena. The case does not involve any claims for money damages against the Clark Fork Coalition or other Plaintiffs.

10. Certification for Individuals or Public Entities

Individuals or private entities requesting grant funds must sign the following certification.

Certification for Individuals or Private Entities

I (We) the undersigned, have provided this financial information as part of my (our) application for a grant from the UCFRB Restoration Fund. I (We) certify that the statement is complete and accurate to the best of my (our) knowledge and I (we) authorize the State of Montana to investigate my credit worthiness and any of the matters described above.

Individual(s)

_____	_____	_____	_____
Name	Social Security No.	Signature	Date
_____	_____	_____	_____
Name	Social Security No.	Signature	Date

Social Security Numbers will be kept confidential.

Private Entities

Tracy Stone-Manning	36-3428665		March 20, 2006
Name of Authorizing Agent	Federal Tax ID No.	Signature	Date

11. Authorizing Statement

An authorized agent/agents representing the applicant must by his/her signature indicate that the application for funds and expenditure of matching funds, as represented, is officially authorized.

Grant Authorization

I hereby declare that the information included in and all attachments to this application are true, complete, and accurate to the best of my knowledge, and that the proposed project complies with all applicable state, local, and federal laws and regulations.

I further declare that, for **the Clark Fork Coalition** (Project Sponsor), I am legally authorized to enter into a binding contract with the State of Montana to obtain funding if this application is approved. I understand that the Governor must authorize funding for this project.

Clark Fork Coalition

Project Sponsor

March 20, 2006

Date

Authorized Representative (signature)

Executive Director

Title

PROPOSAL ABSTRACT

Applicant Name: Clark Fork Coalition

Project Title: Development of Alternatives for Additional Sediment Removal at Milltown Reservoir

Project Description and Benefits to Restoration:

The goal of this Project Development Grant is to estimate the cost for two possible alternatives for removal of additional sediments from the Milltown Reservoir, and to estimate the cost-savings that would occur if these sediments were removed. The proposal will also consider the no-action alternative. The two removal alternatives that will be evaluated are excavation and haulage of the sediments to either a local repository or a commercial landfill near Missoula. This PDG will not estimate costs for excavation and rail haul to the Opportunity Ponds, since those costs were already determined as part of the Consent Decree negotiations. However, since implementation of either of the alternatives will change or eliminate some of the costs of the remedial action, this project will estimate these cost savings. The findings of this study are necessary to evaluate the feasibility of removing additional sediments, and may be used for a larger proposal to the NRD. The ultimate goal is to help the State with restoration plans in the Milltown reservoir area.

This project development proposal and the eventual full proposal both fall under the NRD restoration category. Removing the SAAIII-b sediments would restore aquatic resources and riparian habitat by allowing the development of additional wetlands at the confluence, and would allow restoration of a naturally functioning river channel following removal of the Milltown Dam. Removal would also prevent the possibility of residual contamination that may occur as a result of leaving the sediments in place.

EPA has determined that the vast majority of the ground and surface water contamination is coming from the 2.6 million cubic yards of sediment in the lower reservoir, just above the dam, but they are not requiring removal of all the contaminated sediments from Milltown Reservoir. Instead, they plan to remove only as much as they believe necessary to bring arsenic levels in Milltown's groundwater down to acceptable standards. The remedial action will leave approximately 350,000 cubic yards of contaminated sediments in place just upstream of the dam in the existing Clark Fork channel. These sediments, known as Sediment Accumulation Area III-b (SAAIII-b), are contaminated with arsenic and copper at levels comparable to the sediments being removed in the reservoir area, and they have come from the same source; the downstream transport of mining and smelting wastes from Butte and Anaconda. Under the final agreement between EPA, ARCO, Northwestern and the State of Montana, these sediments would be left in place as an armored, long-term waste repository outside, but adjacent to, the 100-year floodplain at the confluence of the Clark Fork and Blackfoot Rivers.

To accomplish the goals and objectives of the planning grant, we propose to hire a qualified engineering firm, Maxim Technologies Inc, to develop a preliminary design and cost for each alternative and for each cost-savings item that would occur if the SAAIII-b sediments were removed. Maxim will first develop reconnaissance level designs in order to be able to quantify approximate amounts for excavation, haul, reclamation and other tasks. They would then estimate costs for individual components of the two proposed alternatives, including unit costs for materials, installation or construction costs, land acquisition, long-term maintenance, mobilization, bonding, insurance and other incidentals that might occur in a typical construction contract. Cost estimates will be presented on an item-by-item basis so that they can be applied individually if variations on the alternatives that are considered. The final deliverable product for this project will be a report that describes a preliminary design and itemized cost for each alternative and the value of potential cost-savings that would occur if the SAAIII-b sediments were removed. The report will also summarize the assumptions and uncertainties in developing the designs and costs.

Total project cost is \$24,852. The Clark Fork Coalition requests a grant of \$23,452 from the Natural Resource Damage Program, and will provide \$1,400 in matching funds as in-kind project management services (5.6 % match).

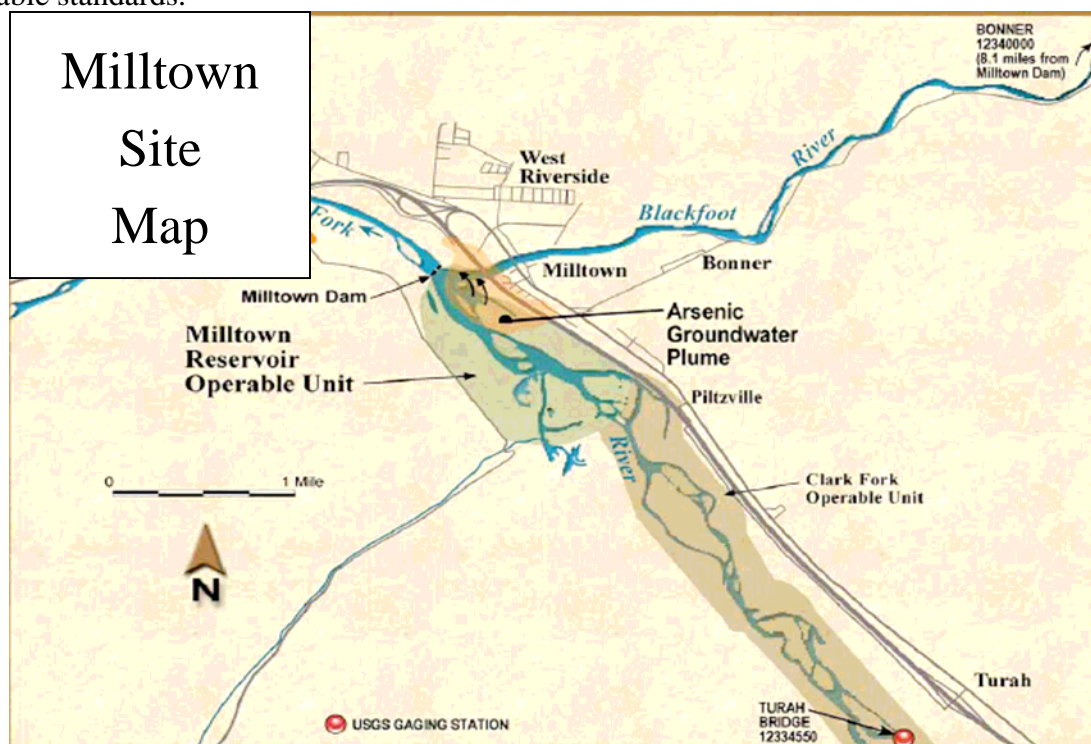
TECHNICAL NARRATIVE

Applicant Name: Clark Fork Coalition

Project Title: Development of Alternatives for Additional Sediment Removal at Milltown Reservoir

A. Define the Problem

The Milltown Reservoir Sediments Superfund site is scheduled for cleanup beginning in 2006. The EPA's Record of Decision (2004) and the Consent Decree (2005), specify that remedial action will include removal of the Milltown Dam and approximately 2.1 million cubic yards of metal and arsenic-contaminated sediment from the reservoir behind it. EPA has determined that the vast majority of the ground and surface water contamination at Milltown is coming from the 2.6 million cubic yards of sediment in the lower reservoir, just above the dam, but they are not requiring removal all of the contaminated sediments from Milltown Reservoir. Instead, they plan to remove only as much as they believe necessary to bring arsenic levels in Milltown's groundwater down to acceptable standards.



The remedial action will leave approximately 350,000 cubic yards of contaminated sediments in place just upstream of the dam in the existing Clark Fork channel. These sediments, known as Sediment Accumulation Area III-b (SAAIII-b), are contaminated with arsenic and copper at levels comparable to the sediments being removed in the reservoir area (SAAI). (See Figures 1 and 2, attached) The area is wholly within the Milltown Reservoir Sediments Operable Unit of the Milltown Reservoir/Clark Fork River Superfund Site. Under the Consent Decree and the State's current restoration plan, these sediments would be left in place as an armored, long-term waste repository outside, but adjacent to, the 100-year floodplain at the confluence of the Clark Fork and Blackfoot Rivers. Although ARCO will be required to monitor and maintain this repository, it will nonetheless restrict the width of the floodplain at the confluence, and could become a source of long-term metal and arsenic pollution to the river and groundwater.

B. Project Goals and Objectives

The goal of this Project Development Grant is to estimate the cost of two possible alternatives for removal of SAAIII-b sediments from the Milltown Reservoir with the ultimate goal of developing sufficient information in order to submit a full proposal for additional sediment removal to NRD. The two alternatives that will be evaluated are excavation and haulage of the sediments to either a local repository or a commercial landfill near Missoula. We will also consider the no-action alternative. Both of the two removal options would include hauling and placing backfill in the area of the excavation, sculpting and creating wetlands in the excavation area, and reclamation. We will not estimate costs for excavation and rail haul to the Opportunity Ponds, since those costs were already determined as part of the Consent Decree negotiations. However, since implementation of any of the removal alternatives will change or eliminate some of the costs of the remedial action, this project will estimate those cost savings. Elements that would be subject to potential cost savings include:

- Elimination of the hardened riprap bank and toe protection to prevent scour of the sediments left in place
- Elimination of reclamation costs for the surface of the left-in-place sediments including revegetation and liming would no longer be necessary
- Wetland credits for created wetlands
- Operation and maintenance savings
- Replacement costs for topsoil at the Opportunity Ponds

Determination of these costs and potential cost savings is necessary to evaluate the feasibility and cost effectiveness of removing the SAAIII-b sediments. If, after review of these numbers and negotiation with the settling defendants, it is determined that this removal is cost-effective, we would submit a full proposal for removal to NRD. This project development grant is a necessary first step.

Existing Condition

Under the current plan for remediation and restoration, the SAAIII-b sediments will be isolated with an armored slope face that will be keyed in to the underlying alluvium (**see Figures 3 and 4, attached**). The specific type and amount of armoring for this repository has not yet been designed. The NRD restoration plan will construct a high terrace adjacent to the armored repository to further protect the contaminated sediments from being scoured and washed downstream. (**See Figure 1, attached**) Although the NRD plan makes the best of this situation by disguising the armored embankment with a terrace, the combined width of the SAAIII-b sediments and the adjacent terrace would cut the potential available width of the floodplain roughly in half. This would result in a quarter-mile long constricted reach of the river just above the confluence with the Blackfoot, making it more difficult to create the kind of natural functioning river channel that the state's restoration goals call for.

The SAAIII-b sediments are contaminated with metals and arsenic. Similar to the reservoir sediments that are being removed, the SAAIII-b sediments contain up to 588 ppm arsenic and up to 4800 ppm copper. The highest metals concentrations are found in the clays and silts at lower elevations; the overlying deposits are somewhat cleaner (EPA, 2002; Envirocon, 2004). EPA believes that seepage of arsenic from these sediments will be sufficiently diluted by either groundwater or the river to avoid violating standards (EPA, 2004, Responsiveness Summary). Theoretically, if the repository does become a pollution problem, the EPA could order removal of

the sediments after the required 5-year review period. However even if this pollution is not severe enough to violate standards – which is uncertain – there are several reasons it's not desirable to leave these sediments in place.

Desired Future Condition

First, removing these sediments would allow for a less constricted floodplain and more natural channel function at and immediately upstream of the confluence with the Blackfoot. Removing these sediments would double the width of the floodplain for about a quarter mile upstream of the confluence. In large floods, a wider floodplain would result in decreased water velocity and therefore less scour at the confluence and immediately downstream. Supporting this is the opinion of a river restoration specialist, Tyler Allred of Allred Restoration, Inc., recently hired by Missoula County to review NRD's restoration plan at Milltown. Mr. Allred strongly recommended removal of the SAAIII-b sediments – an excerpt from his correspondence with the County is quoted below and the full document is included as an attachment to this proposal.

“My first major concern involves the contaminated sediments that will remain in the floodplain after the remediation work is complete. I suggest that the decision to leave these sediments in place should be revisited. These sediments, especially those in the area of the dam (SAAIII-b), restrict the width of floodplain that is available for the river to use for both migration and flood attenuation and I believe that they should be removed now, rather than trying to stabilize them in situ. The benefits to both the aesthetics and the function of the river for the long term could be substantial.”

Second, the sediments may be a future source of groundwater contamination if the water table fluctuates through the lower-most part of the deposit, as groundwater modeling indicates is possible (Clark Fork Coalition, 2003). If this were to become a problem before the 5-year review of remedial actions, the sediments could theoretically be removed at a later date. But in reality, this would be impractical and expensive because construction infrastructure would be gone, and removing sediments adjacent to the new channel would be destructive to restoration work already accomplished by that time. It makes sense to remove these sediments while the rest of the sediment removal is being done.

Finally, although these sediments, if left in place, will be out of the 100-year floodplain, they are adjacent to the river and not in a location where one would typically want to build a long-term waste repository. Left to its own devices, the river will naturally migrate across its floodplain toward the sediments, particularly during large floods. In the long term, the river will eventually erode into the terrace covering the rip-rap wall, exposing it and detracting from the natural appearance of the site. The settling defendants (ARCO/BP) have no obligation to revegetate the rip-rap, gabions or other armoring material in the long term, although they are required to provide structural maintenance of the sediment repository in perpetuity (Envirocon, 2005). This may require periodic disruption of an otherwise restored and popular recreational area. The site is expected to see significant public use once restoration and redevelopment are completed. Removing sediments in SAAIII-b will benefit the long-term health of the Clark Fork River and would restore and rehabilitate injured natural resources lost as a result of hazardous substances by past mining in Butte.

This situation is very similar to Silver Bow Creek, where EPA had planned to leave about 336,000 yards of tailings in place. The Greenway Service District successfully applied to the NRD program for \$2.7 million to remove these tailings, for precisely the same reasons discussed above – i.e., to allow for more natural river function and to eliminate residual metals pollution. The same logic applies at Milltown, and the magnitude of the project is very similar.

C. Project Implementation Plan

Overall Approach

We propose hiring a qualified engineering firm from the State's list of Environmental Service Providers, Maxim Technologies Inc, to develop a preliminary design and cost for each alternative and for each cost-savings item that would occur if the SAAIII-b sediments were removed. These numbers will be used to develop a full proposal for sediment removal if it appears that this is feasible and cost-effective.

Maxim will estimate costs for individual components of the two proposed alternatives. To do this, they will first develop reconnaissance level designs for some of the individual components of the alternatives. The purpose of these designs is to be able to quantify approximate amounts for excavation, haul, reclamation and other tasks. In particular they anticipate producing reconnaissance level designs for a local repository (including lining and leachate collection systems), haul roads, and final topography within the excavation footprint.

With reconnaissance level designs completed, costs would then be estimated for components of each alternative by multiplying estimated quantities from the designs by estimated unit costs to complete the work. Maxim will estimate unit costs for materials, installation or construction costs, land acquisition, long-term maintenance, mobilization, bonding, insurance and other incidentals that might occur in a typical construction contract. Maxim has considerable experience with unit costs from other similar contracts such as, but not limited to, Streamside Tailings Operable Unit; abandoned mine reclamation projects in the Upper Tenmile, Little Blackfoot and Basin Creek drainages; and cost estimates prepared by others and Maxim for the Clark Fork River remediation. Maxim will also contact material and equipment suppliers to get unit costs for materials that might be involved in the alternatives and would contact the Missoula landfill for tipping fees. In the absence of other more appropriate methods they will rely on unit costs from other compilations of contracting costs such as Means Heavy Construction Cost Estimate Guide or bid tabulations published by the Montana Department of Transportation.

Costs estimates will be presented so that they are potentially applicable to variations on the alternatives that we would consider. Maxim will list costs on an item-by-item basis and would also present unit costs for each item.

Alternatives to Be Evaluated

Maxim will primarily focus on estimating costs for the two alternatives involving excavation and haul of the sediments to either a local repository or to an existing commercial landfill. However, the selection of either one of these alternatives might have cost implications (either a savings or an additional cost) to the RA or to other plans which have been previously investigated that would have excavated and hauled sediments to the Opportunity Ponds. Maxim will quantify the costs of those portions of the RA that would be changed or eliminated by the selection of either one of the alternatives considered herein.

The alternatives for which construction costs will be estimated and the individual items composing each alternative are described in the following sections.

Alternative 1 – Local Repository

In this alternative, excavated sediments will be truck hauled to a local repository constructed specifically to accommodate these sediments. The repository would be located on gently sloping land currently in Plum Creek Timber Company's ownership lying immediately south of the Milltown Dam Operable Unit. The repository would have a bottom liner and leachate collection system. The cover would consist of geosynthetic liner material with a soil cover obtained from material excavated at the repository site.

Anticipated items for costing include:

- Mobilization
- Clearing and grubbing
- Repository excavation
- Waste placing and grading
- Liner and cover
- Leachate collection system
- Repository reclamation
- Repository fencing
- Haul road construction and reclamation
- Excavation and loading of waste
- Waste haul and unload
- Backfill excavation and haul
- Grading backfill of removal area
- Reclamation of removal area including establishment of wetlands
- Engineering
- Construction oversight
- Construction surveying
- Land acquisition costs

Maxim will assume that the sediments could be excavated in generally dry conditions with excavators or loaders.

Alternative 2 – Commercial Landfill

Under this alternative, excavated wastes would be truck hauled to the Allied Waste Landfill in Missoula for disposal. A local source of borrow material would be used to backfill the excavation, and the area would be reclaimed to include some wetland features.

Anticipated items for costing include.

- Mobilization
- Tipping fees
- Haul road construction and reclamation
- Excavation and loading of waste
- Waste haul and unload
- Backfill excavation and haul
- Grading backfill of removal area

- Reclamation of removal area including establishment of wetlands
- Engineering
- Construction oversight
- Construction surveying

As with Alternative 1, Maxim would assume that the sediments could be excavated in generally dry conditions with excavators or loaders.

RA Cost Changes

Implementation of either of the alternatives will change some costs of the remedial action because certain of the elements of the RA will no longer be needed or will be altered. Items that have been identified that are subject to change are:

- Hardened riprap bank and toe protection to prevent scour of the sediments left in place
- Reclamation costs for the surface of the left-in-place sediments including revegetation and liming
- Wetland credits for created wetlands
- Operations and maintenance savings
- Replacement costs for topsoil at the Opportunity Ponds

Preliminary designs will be developed for these items as needed, and costs estimated using similar techniques to those used to cost the alternatives.

Reporting

The final deliverable product for this project will be a report evaluating the sediment removal alternatives, including the no-action alternative. Maxim will provide a report describing a preliminary design and cost for each alternative and for each cost-savings item that would occur if the SAAIII-b sediments were removed. The report will summarize the alternative designs and assumptions used in developing the RA cost changes. Figures will be developed showing the reclaimed condition of the removal area, the local repository plan view, and a cross section of the hardened rip-rap bank (to be replaced in the alternatives). Detailed cost estimates for the alternatives and the cost changes will be attached.

The Clark Fork Coalition will include this information in the final report to the NRDP, which will include an evaluation of the alternatives, including the no-action alternative. The Clark Fork Coalition will ensure that all NRD reporting requirements are met.

D. Project Time Schedule

The project will begin as soon as funds are available, depending on Maxim's schedule. An approximate time-table follows:

<u>Task</u>	<u>Approximate time frame</u>
Design of alternatives	July 2006 – August 2006
Cost estimation	September 2006 – October 2006
Reporting – Maxim	November 2006
Reporting – Clark Fork Coalition	November 2006

The final report to NRD will be completed by December 1, 2006.

E. Methods and Technical Feasibility of the Proposed Project

The methods that Maxim will use are previously described in the “Project Implementation” section of this proposal under “Alternatives to be Evaluated.” Estimation of these costs is feasible, and any uncertainty in the development of alternatives or their cost estimates will be identified and described in the final project report to NRD. Maxim has considerable experience with cost estimation from other similar contracts such as, but not limited to, Streamside Tailings Operable Unit; abandoned mine reclamation projects in the Upper Tenmile, Little Blackfoot and Basin Creek drainages; and cost estimates prepared by others and Maxim for the Clark Fork River remediation.

F. Monitoring Plan

Not applicable to this project development grant.

G. Qualifications of the Project Team

Maxim Consulting, Inc. will provide the engineering expertise required for this project. Maxim was chosen from the State of Montana’s list of term contract Environmental Service Providers. Maxim is a multidisciplinary consulting firm employing over 120 persons in five Montana offices, including Missoula, Great Falls, Helena, Bozeman, and Billings. The firm has been in business in Montana since 1959 and has grown throughout the years to provide services in several technical disciplines, including:

- Hydrology, Hydrogeology, Geology, Soil Science
- Geochemistry and Chemistry
- Botany & Range, Wildlife Biology, Fisheries and Aquatics
- Forestry and Fire Management
- Environmental Engineering, Civil Engineering
- Geographic Information Systems (GIS)
- Computer-assisted Design Drafting (CADD)
- Database Management

Maxim specializes in completing watershed assessments, TMDL evaluations, water quality monitoring and modeling, wetlands delineations and restoration, GIS analysis, statistical determinations, database management, stream reconstruction, revegetation design, and reclamation construction oversight. Maxim has worked on similar projects, including Streamside Tailings Operable Unit; abandoned mine reclamation projects in the Upper Tenmile, Little Blackfoot and Basin Creek drainages; and cost estimates prepared by others and Maxim for the Clark Fork River remediation.

The Clark Fork Coalition will contribute to this project by administering the grant and ensuring that all NRD reporting requirements are met. We will ensure that the project proceeds on schedule, and will incorporate Maxim’s final report into the report format required by the NRDP. The Coalition is a nonprofit watershed conservation group dedicated to protecting and restoring the Clark Fork River basin, which stretches from Butte, Montana to Sandpoint, Idaho. We have been involved in the Milltown project for about the past 20 years. As a member-supported group of citizens, scientists, recreationists, and business leaders, we capitalize on our expertise in environmental science, law, business and economics, and community outreach to protect and restore the Clark Fork watershed.

H. Supporting Technical Documentation

References Cited:

Clark Fork Coalition, 2003, Preliminary Groundwater Modeling to Estimate Effects of Dam and Sediment Removal on the Alluvial Aquifer in Milltown, Montana, January.

Envirocon, 2004, Remedial Design Data Summary Report #1, Covering September 2003 through April 2004 Field Activities, Milltown Reservoir Sediments Site, June.

Envirocon, 2005, "Appendix C, Consent Decree for the Milltown Site, Remedial Design/Remedial Action Statement of Work", July.

EPA, 2002, "Supplemental Data Summary Report: Milltown Reservoir Sediments, Sediments Operable Unit", prepared by CH₂M Hill, November.

EPA, 2004, "Milltown Reservoir Sediments Operable Unit of the Milltown Reservoir/Clark Fork River Superfund Site, Record of Decision", December.

State of Montana, 2005, "Draft Restoration Plan for Restoring the Clark Fork River and Blackfoot River following the Removal of Milltown Dam", October.

Attached Figures:

Figure 1: Site Overview, from WestWater Consultants, Inc, Draft Restoration Plan, Sheet I-2

Figure 2: SAAIII-b sediments and concentrations, from EPA Record of Decision, Exhibit 2-30

Figure 3: Site overview, from Envirocon RD/RA Statement of Work, Figure 28

Figure 4: SAAIII-b cross-section, from Envirocon RD/RA Statement of Work, Figure 30

Attached Documents:

- MaximTechnology Inc's proposal and budget worksheets
- Tyler Allred's letter to Missoula County

Letters of Support:

Letters of support have been obtained from

- Missoula County,
- Milltown Redevelopment Working Group,
- Bonner Development Group,
- Friends of Two Rivers,
- Trout Unlimited.

Signed letters have been sent directly to the NRD program, but copies are attached to this proposal for reference.

CRITERIA STATEMENTS

1. Relationship of Expected Costs to Expected Benefits:

The direct benefit of the project development grant is a more accurate estimate of the cost and cost-savings of removing SAAIII-b sediments than we currently have, and thus a more accurate budget for developing a full proposal. By doing this project, we will also determine the most cost-effective method of removing the sediments.

In terms of the larger goal of sediment removal, direct benefits of the project are full restoration of the contaminated floodplain of the Clark Fork River at the confluence with the Blackfoot River. The ability to build a less constricted floodplain and channel through the confluence would restore aquatic and riparian resources, would lessen the impact of floods on the channel and floodplain both at the site and downstream, would increase public safety during large floods, would eliminate the need for long term maintenance at the confluence, and would increase public access. The indirect benefits of the larger project are elimination of the potential for future scour of contaminated sediments downstream, and elimination of the potential for residual contamination to groundwater in the long term.

Apart from the direct monetary cost of the project, which is yet to be determined, an indirect cost of sediment removal is the long-term maintenance of the disposal site. Whether these sediments are disposed of in an existing or a new repository, they will require maintenance in perpetuity. If they are consolidated with other sediments in an existing repository, overall monitoring and maintenance does not increase.

2. Cost Effectiveness:

The potential alternatives to this project development grant include, (1) direct negotiations with Envirocon on costs for additional sediment removal, (2) submitting a full proposal for sediment removal without first estimating costs of alternatives, and (3) the no-action alternative of leaving the SAAIII-b sediments in place. The first alternative is certainly possible for the State NRD Program, but negotiations would be more productive for them using the results of this PDG. During the Consent Decree negotiations, Envirocon offered a rough, preliminary estimate of \$5-8 million dollars to remove SAAIII-b sediments. However, while this estimate included the proportional costs of the infrastructure for removal of SAA I sediments, it did not include the cost savings that would occur from not building and maintaining the repository. Nor did it consider other benefits to the settling defendants such as additional wetland credits. This PDG will supply estimates for these benefits that would help the State's negotiations for sediment removal.

Second, we considered the alternative of submitting a full proposal for sediment removal, without first submitting this planning grant. This is also possible, but is less cost-effective than first estimating the cost of alternatives and cost savings. This PDG will help to focus our efforts in the larger proposal and make it more cost effective. There are currently too many unknowns about the costs and cost savings to present a full proposal at this time.

Finally, we considered the no-action alternative of not submitting this project development grant, not submitting a full proposal, and thus not removing the SAAIII-b sediments during the remedial action. This would result in a long-term waste repository maintained in perpetuity, or possibly removed at a later date, both of which have potential costs described in the previous section.

3. Impacts to the Environment and Human Health and Safety:

Since the project development grant does not involve any on-site work, there are no expected impacts to the environment or human health and safety. Impacts of the larger project can't be assessed at this time since the mechanism for removal and disposal has not been determined.

4. Public Support:

Letters of support have been obtained from the Missoula County Commissioners, the Milltown Redevelopment Working Group, Friends of Two Rivers, Trout Unlimited, and the Bonner Development Group. Copies of these letters are attached – some have also been sent directly to the NRD Program.

5. Public Access:

Public access would not change as part of this project development grant, however for the larger project, sediment removal may result in increased public access since ARCO would be absolved from long-term maintenance responsibilities that would limit opportunity for public use of the property.

PROPOSAL BUDGET

Total project cost is \$24,852. The Clark Fork Coalition requests a grant of \$23,452 from the Natural Resource Damage Program, and will provide \$1,400 in matching funds as in-kind project management services (5.6 % match). The bulk of the cost is contracted services from Maxim Technologies. Inc. (\$22,002) with all but \$122 of this allocated to engineering and GIS staff time. Maxim's itemized budget is included as an attachment to the NRD budget form.